

DRILL HOLES

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PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new Traffic Control Signal with street lighting and interconnect at the intersection of MD 28 (Norbeck Rd) and Wintergate Drive in Montgomery County. Hazard Identification Beacons shall be installed on the westbound approach of Norbeck Road in advance of this intersection. Video detection shall be used at this intersection. MD 28 (Norbeck Rd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA four-phase, semi-actuated mode, with the MD 28 (Norbeck Rd) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the westbound approach of MD 28 (Norbeck Rd). For side sampling stations shall be provided on both legs of MD 28 (Norbeck Rd) at this intersection. The Wintergate Drive approach shall run in its own phase.
- A full-traffic-actuated, eight-phase controller with video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Dr. Wilhelm Derminassian (240) 777-8795 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Lee Starkloff
Assistant District Engineer - Traffic
Phone: (301) 513-7318

Mr. Sonny Bailey
Sign Shop
410-787-7670

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Dr. Wilhelm Derminassian
Montgomery County
240-777-8795

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

The power company representative is:
Mr. Steve Custer
PEPCO Customer Design
201 W Guide Dr.,
Rockville, MD 20850
Phone: 301 548-4333

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A. AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	34 SF
	W1-2R "CURVE AHEAD (Symbolic)" sign, (36" x 36") with hardware.	1 EA
	W1-2L "CURVE AHEAD (Symbolic)" sign, (36" x 36") with hardware.	1 EA
	W3-3 NEW "SIGNAL AHEAD" sign, (48" x 48") with hardware.	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	132 SF
	D3-2 "Wintergate Dr 2800'" sign, (variable x 16") mast arm.	1 EA
	D3-2 "Wintergate Dr 2800'" sign, (variable x 16") mast arm.	1 EA
	D3-2 "Norbeck RD" sign, (Variable x 16") mast arm	1 EA
	R3-3(5) mod "NO LEFT TURN (Symbolic) / 4PM-7PM MONDAY-FRIDAY EXCEPT BUSES" sign (36"x24") mast arm.	1 EA
	R3-SR "RIGHT TURN ONLY" sign, (30" x 36") mast arm.	1 EA
	W3-3 "SIGNAL AHEAD" sign, (36" x 36") pole mount.	1 EA
	W3-3(2) "SIGNAL AHEAD/PREPARE TO STOP WHEN FLASHING" sign, (120" X 60") mast arm.	1 EA
	GUIDE SHIELD ASSEMBLY (36"x75") pole mounted.	1 EA
	M3-4 "WEST" (30"x15")	
	M1-5 "MD 28" (36"x36")	
	M6-1 "left arrow" (30"x24")	
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted.	1 EA
	M3-2 "EAST" (24"x12")	
	M1-5 "MD 28" (24"x24")	
	M6-1 "right arrow" (21"x15")	

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2002	Test Pit Excavation	6 C.Y.
5001	5" white heat applied permanent preformed thermoplastic pavement marking.	105 L.F.
5002	5" yellow heat applied permanent preformed thermoplastic pavement marking.	410 L.F.
5003	Removal of existing permanent pavement line markings	400 L.F.
5006	24" white heat applied permanent preformed thermoplastic pavement marking.	65 L.F.
6006	Traffic barrier w Beam using 6' Post	160 L.F.
6008	Type C traffic barrier end treatment.	3 EA
8001	Furnish and install concrete for signal foundation.	21 C.Y.
8014	Pre-manufactured camera to controller (200' length) cable	3 EA
8027	Furnish and install breakaway pedestal pole (14').	1 EA
8028	Relocate sign.	36 SF
8034	3" electrical conduit riser (PVC).	15 LF
8035	Furnish and install electrical cable - 5 conductor (No. 12 AWG)	1150 LF
8037	Furnish and install electrical cable - 1 conductor (No. 250 KCMIL)	140 L.F.
8043	Wood sign supports 4"x6".	40 L.F.
8044	Furnish and install No. 6 AWG stranded bare copper ground wire.	285 L.F.
8047	Weatherhead, 3 inch	1 EA
8050	Furnish and install 4" schedule 80 rigid polyvinyl chloride - bored.	170 L.F.
8051	Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched.	45 L.F.
8052	Furnish and install 3" schedule 80 rigid polyvinyl chloride - trenched.	185 L.F.
8053	Furnish and install 4" schedule 80 rigid polyvinyl chloride - trenched.	60 L.F.
8058	Metered pedestal service.	1 EA
8061	Furnish and install electrical cable 1-conductor No. 4 AWG THHN/THWN.	35 L.F.
8067	Furnish and install electrical handhole.	5 EA
8069	Install ground mounted sign.	34 SF
8070	Install overhead sign.	132 SF
8071	Video detector camera.	3 EA
8075	27" steel pole and twin 50' (cut to 40')/50' mast arms.	1 EA
8076	Furnish and install 27' mast arm pole and 38' mast arm.	1 EA
8078	Furnish and install 27' mast arm pole and 60' (cut to 20') mast arm.	1 EA
8082	Furnish and install 12-pair communication cable, self-supporting (overhead).	3660 L.F.
8084	Furnish and install 250 watt HPS Luminaire with photocell.	1 EA
8091	Furnish and install ground rod - 3/4" x 10'.	8 EA
8093	Furnish and install 12" vehicular traffic signal head section	30 EA
8096	Cut, clean, galvanize and cap traffic signal structure.	2 EA
8101	Furnish and install electrical cable -5 conductor (No. 14 AWG).	80 L.F.
8102	Furnish and install electrical cable -7 conductor (No. 14 AWG).	515 L.F.
8103	Furnish and install tray cable - 2 conductor (No. 12 AWG).	130 L.F.
8107	Furnish and install 15' lighting arm for traffic signal structure.	1 EA

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8110	Furnish and install steel span wire, 3/8" diameter.	750 L.F.
8112	Install controller and cabinet base mount.	1 EA

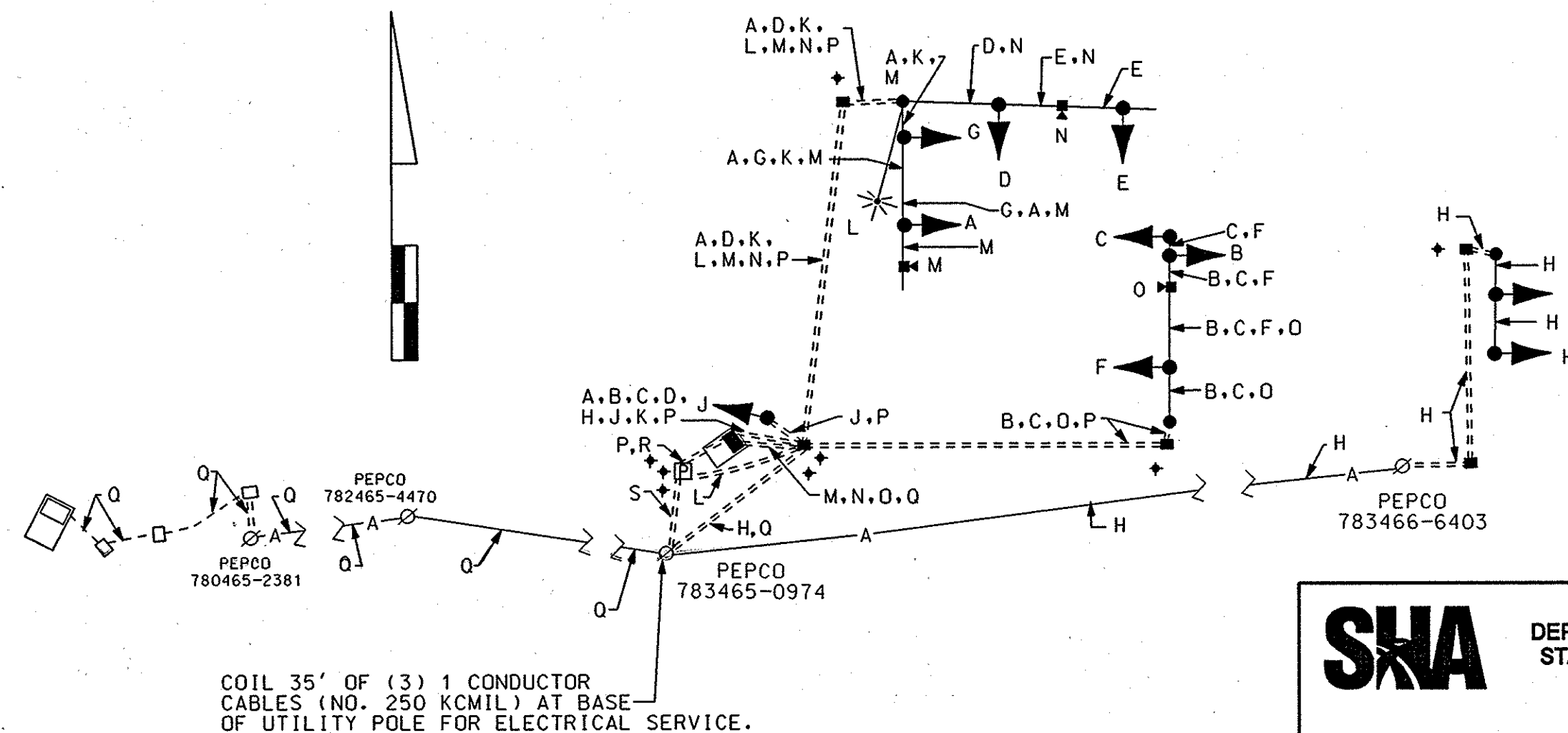
C. EQUIPMENT TO BE REMOVED

There is no signal equipment to be removed.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10
	(R)	(R)	(R)	(Y)	(Y)	(R)	(R)	(R)	(R)	(R)
	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)
	(G)	(G)	(G)	(G)	(G)	(G)	(G)	(G)	(G)	(G)
PHASE 2 & 6	G	G	G	DARK	DARK	G	G	G	R	R
2 & 6 CHANGE	Y	Y	Y	DARK	DARK	G	G	G	R	R
PHASE 2 & 5	R	R	R	DARK	DARK	G-G/G	G-G/G	G	R	R
WB RED WARNING	R	R	R	FL/Y	FL/Y	G-G/G	G-G/G	G	R	R
2 & 5 CHANGE	R	R	R	FL/Y	FL/Y	Y-Y/Y	Y-Y/Y	Y	R	R
PHASE 4	R	R	R	FL/Y	FL/Y	R	R	R	G	G
4 CHANGE	R	R	R	FL/Y	FL/Y	R	R	R	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	DARK	DARK	FL/Y	FL/Y	FL/Y	FL/R	FL/R

WIRING DIAGRAM



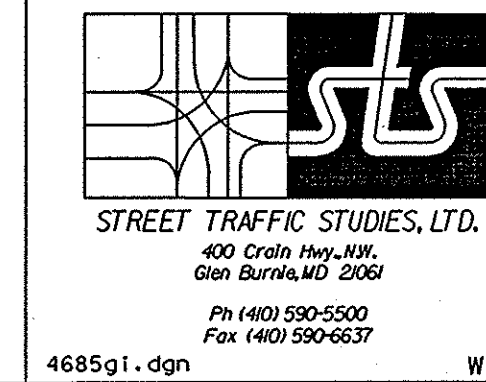
WIRING KEY	
A	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
B	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
C	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
D	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
E	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
F	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
G	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
H	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
I	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
J	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
K	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
L	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
M	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
N	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
O	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
P	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Q	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
R	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
S	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
T	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
U	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
V	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
W	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
X	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Y	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Z	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 28 AND WINTERGATE DR.

SCALE	NONE	DATE	6/15/05	CONTRACT NO.	AT7185185
DESIGNED BY	J.A.	COUNTY	MONTGOMERY		
DRAWN BY	R.C.	LOGMILE	15002828.33		
CHECKED BY	[Signature]	TMS NO.	G536		
F.A.P. NO.	AC STPG-0005(934)E	TOD NO.			
TS NO.	4351G1	DRAWING NO.	OF	SHEET NO.	3 OF 3



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FILE: #FILE#